UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,135	04/19/2004	Trudy L. Benjamin	200309237-1	2301

22879 7590 06/13/2006

HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER	
MARTIN, LAURA E	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/827,135	BENJAMIN ET AL.	
	Examiner	Art Unit	
	Laura E. Martin	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-73* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-73* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *4/14/04* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/6/04, 2/13/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 73 and 74 been renumbered 72 and 73.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-6, 9-15, 30-32, 35, 37, 38, 50, 51, 54-56, 59, and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Skene et al. (US 20020175965).

As per claim 1, Skene et al. teaches a fluid ejection device comprising: an identification line (figure 4B, element 404); and identification cells electrically coupled to the identification line (figure 4B, element 420), wherein each of the identification cells comprises a memory circuit (figure 4B, element 400B) and a memory element (figure 2, element 16A), wherein each memory circuit is adapted to receive and respond to signals to selectively store a value in the memory circuit, wherein the value determines

whether the identification cell is responsive to signals received on the identification line [0045-0046] and [0019].

As per claim 2, Skene et al. teaches a fluid ejection device, wherein the memory element comprises a fuse coupled to the identification line [0019].

As per claim 4, Skene et al. teaches a fluid ejection device, wherein the memory element is configured to conduct current supplied on the identification line to determine a state of the memory element [0045-0046].

As per claim 5, Skene et al. teaches a fluid ejection device, wherein the memory circuit comprises a switch coupled to the memory element, wherein a state of the switch is controlled by the value (figure 4B, element 420) and [0046].

As per claim 6, Skene et al. teaches a fluid ejection device, wherein the switch is configured to be turned on by the value to program the memory element and to read a state of the memory element [0039] and [0042].

As per claim 9, Skene et al. teaches a fluid ejection device, further comprising data lines, wherein each of the identification cells is configured to receive at least one of the signals on at least two corresponding data lines (figure 4B, elements 402 and 406).

As per claim 10, Skene et al. teaches a fluid ejection device, wherein each identification cell comprises at least one transistor each of which is coupled to a corresponding one of the at least two data lines (figure 4B, element 412).

As per claim 11, Skene et al. teaches a fluid ejection device, comprising: a first line adapted to receive a first signal; a second line adapted to receive a second signal; and a third line adapted to receive a third signal [0019-0020], wherein at least one of the identification cells is configured to receive and respond to the first signal, the second signal, and the third signal to change the value (figure 4B, element 400B).

As per claim 12, Skene et al. teaches a fluid ejection device, comprising: a first line adapted to receive a first signal [0019-0020], wherein each of the identification cells comprises: a switch comprising a control input (figure 4B, element 420); and a first transistor configured to receive the first signal to charge the control input (figure 4B, element 422).

As per claim 13, Skene et al. teaches a fluid ejection device, comprising: a second line adapted to receive a second signal; and a third line adapted to receive a third signal, wherein each of the identification cells comprises [0019-0020]: a second transistor (figure 4B, element 422 – 13 lines/cells) configured to receive the second signal; and a third transistor configured to receive the third signal, wherein the second transistor and the third transistor are controlled to selectively discharge the control input [0045-0046].

As per claim 14, Skene et al. teaches a fluid ejection device, comprising: a fourth line adapted to receive a fourth signal, wherein the one of the identification cells comprises [0019]: a fourth transistor configured to receive the fourth signal, wherein the

second transistor and the fourth transistor are controlled to selectively discharge the control input [0045-0046] (figure 4B, element 422).

As per claim 15, Skene et al. teaches a fluid ejection device, comprising: a fifth line adapted to receive a fifth signal, wherein the one of the identification cells comprises [0019] and [0045-0046]: a fifth transistor configured to receive the fifth signal, wherein the second transistor and the fifth transistor are controlled to selectively discharge the control input (figure 4B, element 422 – 13 lines/cells).

As per claim 30, Skene et al. teaches a fluid ejection device, further comprising input pads, wherein the identification line is disposed adjacent the input pads and spaced apart from the input pads (figure 2, element 62) and figures 4A and 4B.

As per claim 31, Skene et al. teaches a fluid ejection device, comprising signal lines configured to provide enabling signal, wherein a ratio of the number of identification cells to the number of signal lines plus the identification line is greater than one (figure 4B, figure 2).

As per claim 32, Skene et al. teaches a fluid ejection device, comprising signal lines configured to provide enabling signal, wherein a ratio of the number of identification cells to the number of signal lines plus the identification line is greater than 1.5 (figure 4B, figure 2).

As per claim 35, Skene et al. teaches fluid ejection device comprising: a group of data lines (figure 2); an identification line adapted to conduct a program signal and a read signal (figure 4B, element 420); and identification cells electrically coupled to the

identification line, wherein each of the identification cells is coupled to at least two data lines in the group of data lines and is adapted to conduct and respond to signals transmitted on the signals received on the at least two data lines to be selectively enabled, wherein each enabled identification cell is adapted to be programmed via the program signal and read via the read signal [0045-0046].

As per claim 37, Skene et al. teaches the at least two data lines in a first state to enable one of the identification cells and at least one of the at least two data lines is in a second state to disable one of the identification cells [0045-0046].

As per claim 38, Skene et al. teaches the at least two data lines is three data lines (figure 2, element 20A).

As per claim 50, Skene et al. teaches a method of programming a fluid ejection device, comprising: receiving a program signal; receiving enabling signaling at an identification cell; responding to the received enabling signaling to provide an enabling value [0045-0046]; and storing the enabling value that selectively enables the identification cell to be programmed via the program signal [0024] and [0047].

As per claim 51, Skene et al. teaches a method, comprising responding to the program signal to store identification information [0045-0046].

As per claim 54, Skene et al. teaches a method, wherein receiving enabling signaling comprises receiving enabling signaling and data signals representing an image on data lines [0024] and (figure 4B, elements 402 and 406).

As per claim 55, Skene et al. teaches a method, wherein receiving enabling signals comprise receiving three signals and responding to the received enabling signaling comprising responding to the three signals being in a first state and responding to at least one of the three signals being in a second state to disable the identification cell [0045-0046].

As per claim 56, Skene et al. teaches a method of reading a fluid ejection device, comprising: receiving a read signal (figure 4B, element 406); receiving enabling signaling at an identification cell (figure 4A, elements 402, 400A); responding to the received enabling signaling to provide an enabling value [0045-0046]; and storing the enabling value that selectively enables the identification cell to be read via the read signal.

As per claim 59, Skene et al. teaches a method, wherein receiving enabling signaling comprises receiving enabling signaling and data signals representing an image on data lines [0002] and [0045-0047].

As per claim 60, Skene et al. teaches a method, wherein receiving enabling signals comprise receiving three signals and responding to the received enabling signaling comprising responding to the three signals being in a first state and responding to at least one of the three signals being in a second state to disable the identification cell [0045-0046].

Claim 73 is rejected under 35 U.S.C. 102(b) as being anticipated by Aono et al. (US 20020145645).

Aono et al. teaches a method of manufacturing comprising obtaining speed performance information on a firing cell in a fluid ejection device and storing the speed performance in at least one identification cell [0015].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skene et al. (US 20020175965).

Skene et al. teaches the claimed invention except for the memory element being in a first state if the resistance is over 1000 ohms and being in a second state if the resistance is less than 400 ohms. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have ranges of resistances at which each state is working, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skene et al. (US 20020175965) in view of Kao et al. (US 20020057305).

Skene et al. teaches a fluid ejection device; however, it does not disclose a program signal provided on the identification line to program the memory element

comprising a pulse having a voltage level of approximately 14 volts and a pulse width of approximately 1 microsecond in length.

Kao et al. teaches a program signal provided on the identification line to program the memory element comprising a pulse.

Skene et al. and Kao et al. do not teach a voltage level of approximately 14 volts and a pulse width of approximately 1 microsecond in length. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimum values in voltages and pulse levels, since it has been held that where the discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesh*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fluid ejection device taught by Skene et al. with the disclosure of Kao et al. to improve the speed and quality of the fluid ejection device.

Claims 8, 16-19, 44-46, 52, 53, 57, 58, and 61-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skene et al. (US 20020175965) in view of Axtell et al. (US 20020060722).

As per claims 8, 17, 18, and 19, Skene et al. teaches a fluid ejection device.

As per claim 16, Skene et al. teaches a fluid ejection device, wherein the signals comprise enabling signaling (figure 2, elements 20B, 20C).

As per claim 44, Skene et al. teaches a means for responding to received enabling signaling to provide an enabling value [0045-0046].

As per claims 52 and 53, Skene et al. teaches a method of programming a fluid ejection device.

As per claim 61, Skene et al. teaches a fluid ejection device comprising an identification line (figure 4B, element 404); and a plurality of identification cells (figure 4B, element 400B) each comprising a memory element coupled to the identification line (figure 2, element 16A); a first switch (figure 4B, element 420) coupled to the memory element wherein the switch in a charged state allows the momory to respond to sign asl received on the identification line [0045].

As per claim 61, Skene et al. teaches each memory element comprising a fuse coupled to the identification line [0019].

As per claim 63, Skene et al. teaches a first line adapted to receive a first signal (figure 4B, element 406).

As per claim 64, Skene et al. teaches a fluid ejection device comprising a second line adapted to receive a second signal and a third line to receive a third signal (figure 4B, E off, Add).

As per claim 65, Skene et al. teaches signal lines configured to provide enabling signal, wherein a ratio of the number of cells to the n umber of signal lines plus the identification line is greater than 1 (figures 2 and 4B).

As per claim 66, Skene et al. teaches signal lines configured to provide enabling singal, wherein a ratio of the number of ces to thenumber of signal lines plus the identification line is greater than 1.5 (figures 2 and 4B).

As per claim 8, Skene et al. does not teach the memory circuit being a dynamic memory circuit.

As per claim 16, Skene et al. does not teach a first signal comprising a first pulse employed to pre-charge the one of the identification cells; and a second signal comprising a second pulse to selectively discharge one of the identification cells.

As per claim 17, Skene et al. does not teach a first and second pulse being non-overlapping pulses.

As per claim 18, Skene et al. does not teach the second pulse overlapping at least the initiation of a program signal.

As per claim 19, Skene et al. does not teach the second pulse overlapping at least the initiation of a read signal.

As per claim 44, Skene et al. does not teach means for storing the enabling value that enables the identification cell to be programmed via the program signal and read via the read signal.

As per claim 45, Skene et al. does not teach means responsive to the program signal to store identification information.

As per claim 48, Skene et al. does not teach means for responding to enabling signaling received on data lines to decode the enabling signaling on the data lines and provide the enabling value.

As per claim 49, Skene et al. does not teach means for receiving enabling signals comprising means for receiving three signals and the means for responding to

the received enabling signaling comprising means for responding to the three signals being in a first state to enable the identification cell.

As per claims 46, 52 and 57, Skene et al. does not teach pre-charging an identification cell or discharging the identification cell selectively.

As per claims 47, 53 and 58, Skene et al. does not teach discharging the identification cell and charging the identification cell selectively.

As per claim 61, Skene et al. does not teach a second switch coupled to the first switch, the second switch discharging the first switch to prevent the memory element from responding to the signals received on the identification line.

As per claim 63, Skene et al. does not teach each cell comprising a third switch to receive the first signal to charge the first switch to allow the memory element to respond to signals on the identification line.

As per claim 64, Skene et al. does not teach a fourth switch configured to receive the second signal and a fifth switch configured to receive a third signal, wherein the fourth and fifth switch are controlled to selectively discharge the first switch.

As per claim 8, Axtell et al. teaches the memory circuit being a dynamic memory circuit [0015].

As per claim 16, Axtell et al. teaches a first signal comprising a first pulse employed to pre-charge the one of the identification cells; and a second signal

comprising a second pulse to selectively discharge one of the identification cells (figure 7A, elements Pre X and Pre Y; [0097]).

As per claim 17, Axtell et al. teaches the first and second pulses being non-overlapping pulses (figure 7B, elements Pre X and Pre Y).

As per claim 18, Axtell et al. teaches the second pulse overlapping at least the initiation of a program signal (figure 7B, elements Pre Y, Row Yn and Fire Y).

As per claim 19, Axtell et al. teaches the second pulse overlapping at least the initiation of a read signal (figure 7B, elements Pre Y, Row Yn, and Fire Y).

As per claim 44, Skene et al. does not teach means for storing the enabling value that enables the identification cell to be programmed via the program signal and read via the read signal [0046 and (figure 4B, elements Pre Y, Row Yn, and Fire Y).

As per claim 45, Skene et al. does not teach means responsive to the program signal to store identification information [0046] and [0074].

As per claim 48, Skene et al. does not teach means for responding to enabling signaling received on data lines to decode the enabling signaling on the data lines and provide the enabling value [0046].

As per claim 49, Skene et al. does not teach means for receiving enabling signals comprising means for receiving three signals and the means for responding to the received enabling signaling comprising means for responding to the three signals being in a first state to enable the identification cell [0045-0046] and (Figure 7B, fire lines X-Z).

As per claims 46, 52 and 57, Axtell et al. teaches pre-charging an identification cell [0074) and discharging the identification cell selectively [0048].

As per claims 47, 53 and 58, Axtell et al. teaches discharging the identification cell [0048] and charging the identification cell selectively [0045].

As per claim 61, Axtell et al. teaches a second switch coupled to the first switch, the second switch discharging the first switch to prevent the memory element from responding to the signals received on the identification line [0048] and [0055].

As per claim 63, Axtell et al. teaches each cell comprising a third switch to receive the first signal to charge the first switch to allow the memory element to respond to signals on the identification line (figure 6, element 102).

As per claim 64, Axtell et al. teaches a fourth switch (figure 6, element 103) configured to receive the second signal and a fifth switch (figure 6, element 105) configured to receive a third signal, wherein the fourth and fifth switch are controlled to selectively discharge the first switch.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fluid ejection device and method taught by Skene et al. with the disclosure of Axtell et al. in order to create a higher quality and more efficient device and method.

Claims 20-23, 25, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skene et al. (US 20020175965) in view of Inose (US 6385407).

Skene et al. teaches a fluid ejection device.

Skene et al. does not teach an identification cell storing information indicating a manufacturer of the fluid ejection device, a product type, an out of ink detection level, a product version, a uniqueness number or a seller of an original equipment.

Inose teaches a memory storing information indicating a manufacturer of the fluid ejection device (column 6, lines 28-49), a product type (column 2, lines 22-41), an out of ink detection level (column 6, lines 28-49), a product version (column 6, lines 28-49), a uniqueness number or a seller of an original equipment (column 6, lines 28-49).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fluid ejection device taught by Skene et al. with the disclosure of Inose in order to create a higher quality fluid ejection device.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skene et al. (US 20020175965) in view of Pawelka et al (US 5886726).

Skene et al. teaches a fluid ejection device; however it does not disclose an identification cell storing a thermal sense resistance value.

Pawelka et al. teaches a memory storing a thermal sense resistance value (column 4, lines 1-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fluid ejection device taught by Skene et al. with the disclosure of Pawelka et al. in order to create a higher quality fluid ejection device.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skene et al. (US 20020175965) in view of Heim et al (US 6431673).

Skene et al. teaches a fluid ejection device; however it does not disclose an identification cell storing a drop weight delta value.

Pawelka et al. teaches a memory storing a drop weight delta value (column 4, line 66-column 5, line 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fluid ejection device taught by Skene et al. with the disclosure of Heim et al. in order to create a higher quality fluid ejection device.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skene et al. (US 20020175965) in view of Miller (US 20030146967).

Skene et al. teaches a fluid ejection device; however it does not disclose an identification cell storing whether the original equipment is unlocked.

Miller teaches a memory storing whether original equipment is unlocked [0014].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fluid ejection device taught by Skene et al. with the disclosure of Miller in order to create a higher quality fluid ejection device.

Claims 29, 40, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skene et al. (US 20020175965) in view of Bolash et al (US 6081280).

As per claim 29, Skene et al. teaches a fluid ejection device comprising input pads (figure 2, element 62).

As per claim 40, Skene et al. teaches input pads (figure 2, element 62), an identification line (figure 4B, element 404) adapted to conduct a program signal to program identification information and a read signal to read identification information [0037, 0019].

As per claim 42, Skene et al. teaches identification lines disposed adjacent to each of the input pads and spaced apart from the input pads (figure 2, element 62; figures 4A and 4B).

As per claim 43, Skene et al. teaches an identification line disposed between adjacent input pads of the input pads (figure 2, figure 4B).

As per claim 29, Skene et al. does not teach the identification line configured to detect ink shorts between each of the input pads and the identification lines.

As per claim 40, Skene et al. does not teach an identification line configured to conduct a signal to detect low impedance between the identification line and each of the input pads.

As per claim 29, Bolash et al. teaches an identification line configured to detect ink shorts between each of the input pads and the identification lines (column 7, lines 43-49).

As per claim 40, Bolash et al. teaches an identification line configured to conduct a signal to detect low impedance between the identification line and each of the input pads (column 7, lines 43-49).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fluid ejection device taught by Skene et al. with the disclosure of Bolash et al. in order to create a higher quality ejection device.

Claims 33, 34, 36, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skene et al. (US 20020175965) in view of Hayasaki (EP 1128324).

As per claims 33 and 34, Skene et al. teaches a fluid ejection device comprising signal lines to provide an enabling signal (figures 4A and 4B)

As per claim 36, Skene et al. teaches a fluid ejection device.

As per claims 33 and 34, Skene et al. does not teach a ratio of the number of identification lines to the number of signal lines is greater than two or four.

As per claim 36, Skene et al. does not teach signals on at least two data lines are in a first state to enable one of the identification cells and the rest are in a second state.

As per claim 39, Skene et al does not teach the three data lines are in a first state to enable one of the identification cells and the signals on the rest of the group data lines are in a second state.

As per claims 33 and 34, Hayasaki teaches a ratio of the number of identification lines (figure 3, element 1) to the number of signal lines (figure 3, element 5 – lines coming out of decoder) is greater than two or four [0058-0065].

As per claim 36, Hayasaki teaches signals on at least two data lines are in a first state to enable one of the identification cells and the rest are in a second state [0064-0068].

As per claim 39, Hayasaki teaches the three data lines are in a first state to enable one of the identification cells and the signals on the rest of the group data lines are in a second state [0064-0068].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fluid ejection device taught by Skene et al. with the disclosure of Hayasaki in order to create a higher quality fluid ejection device.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skene et al. (US 20020175965) and Bolash et al (US 6081280), and further in view of Axtell et al. (US 20020060722).

As per claim 41, Skene et al. and Bolash et al. teach a fluid ejection device. Skene et al. teaches identification cells electrically coupled to an identification line (figure 4B).

As per claim 41, Skene et al. as modified does not teach identification cells adapted to conduct enabling signaling and to be programmed via the program signal and read via the read signal based on the enabling signaling.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fluid ejection device of Skene et al. as modified with the disclosure of Axtell et al. in order to create a higher quality ink ejection device.

Claims 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skene et al. (US 20020175965) and Bolash et al (US 6081280), and further in view of Hayasaki (EP 1128324).

Skene et al. as modified teaches a fluid ejection device. Skene et al. also teaches enabling lines to provide an enabling signal (figure 2); however, it does not disclose a ratio of the number of cells to the number of signal lines plus the identification line is greater than 2 or 4.

Hayasaki teaches enabling lines to provide an enabling signal (figure 2); however, it does not disclose a ratio of the number of cells to the number of signal lines plus the identification line is greater than 2 or 4 [0058-0065].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fluid ejection device of Skene et al. as modified with the disclosure of Hayasaki et al. in order to create a higher quality printing apparatus.

Claims 69-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skene et al. (US 20020175965) in view of Aono et al. (US 20020145645).

As per claim 69, Skene et al. discloses a fluid ejection device comprising firing cells (figure 2; [0039-0040]) storing a charge value in response to enabling signaling [0045-0046], identification cells to store information (figure 4B, element 400B).

As per claim 70, Skene et al.t discloses a fluid ejection device comprising firing cells (figure 2; [0039-0040]), identification cells to store information (figure 4B, element 400B).As per claim 71, Skene et al. teaches a fluid ejection device comprising firing

cells (figure 2; [0039-0040]) and identification cells to store information (figure 4B, element 400B)

As per claim 72, Skene et al. teaches a fluid ejection device comprising means for ejecting fluid [0021].

As per claims 69, 71, and 72, Skene et al. does not teach identification cells storing speed performance information which is based on at least one timing characteristic of one of the firing cells.

As per claims 69-71, and 72, Aono et al. teaches identification cells storing speed performance information which is based on at least one timing characteristic of one of the firing cells [0015].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the fluid ejection device taught by Skene et al. with the disclosure of Aono et al. in order to improve the timing of the drop ejections.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Martin whose telephone number is (571) 272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura E. Martin

6/9/06

MANISH S. SHAH
PRIMARY EXAMINER